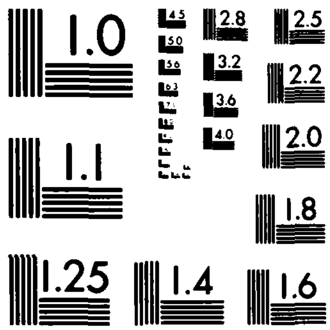
AD-A133 784 ARMY MEDICAL DEPARTMENT MILITARY OCCUPATIONAL SPECIALTY PRIORITIES FOR DE..(U) ACADEMY OF HEALTH SCIENCES (ARMY) FORT SAM HOUSTON TX K FINSTUEN OCT 82 AHS-2 1/1

UNCLASSIFIED F/G 5/9 NL

END



MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

12

TECHNICAL REPORT AHS - 2
OCTOBER 1982

ARMY MEDICAL DEPARTMENT MILITARY OCCUPATIONAL SPECIALTY PRIORITIES FOR DEVELOPMENT OF SOLDIER'S MANUALS AND SKILL QUALIFICATION TESTS

INDIVIDUAL TRAINING DIVISION
DIRECTORATE OF TRAINING DEVELOPMENT
ACADEMY OF HEALTH SCIENCES, U.S. ARMY
FT. SAM HOUSTON, TX 78234

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER AHS - 2	2. GOVT ACCESSION NO. AD-A133	3. RECIPIENT'S CATALOG NUMBER 784
4. TITLE (and Subtitle) ARMY MEDICAL DEPARTMENT MILITARY OCCUPATIONAL SPECIALTY PRIORITIES FOR DEVELOPMENT OF SOLDIER'S MANUALS AND SKILL QUALIFICATION TESTS		5. TYPE OF REPORT & PERIOD COVERED Final 3rd and 4th Qtr FY 1982
		6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) Kenn Finstuen		8. CONTRACT OR GRANT NUMBER(s)
9. PERFORMING ORGANIZATION NAME AND ADDRESS Directorate of Training Development Academy of Health Sciences, U. S. Army Ft. Sam Houston, Tx 78234		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS Assignment Control Number ACN 85785
11. CONTROLLING OFFICE NAME AND ADDRESS Commandant Academy of Health Sciences, U. S. Army Ft. Sam Houston, Tx 78234		12. REPORT DATE October 1982
		13. NUMBER OF PAGES 15
14. MONITORING AGENCY NAME & ADDRESS(if different from Controlling Office)		15. SECURITY CLASS. (of this report) Unclassified
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE

16. DISTRIBUTION STATEMENT (of this Report)

Approved for public release; distribution unlimited.

17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)

18. SUPPLEMENTARY NOTES

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

Soldier's Manual
Skill Qualification Test
Iterative Decision Method
Enlisted Medical Specialties
Group Decision Making
Multiple Linear Regression
Army Medic Training

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

The purpose of this project was to provide a prioritized list of Army Medical Department (AMEDD) Military Occupational Specialties (MOS) to the soldier's manual and skill qualification test project officials. The derived listing of MOS's will be used to determine the order of actions necessary for the development of project products. A panel of seven members involved in the project at the Academy of Health Sciences participated in two rounds of decision making. In the first phase members independently prioritized a list of 30 MOS's. In the second phase of decision making members reviewed feedback from the first

DD FORM 1 JAN 73 1473 EDITION OF 1 NOV 65 IS OBSOLETE

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

round of decisions by examination of statistically modeled data plots of average MOS ranks and the amount of disagreement associated with each MOS plot. Those MOS placements which were most disagreed upon were then targeted for discussion. After group revisions were accomplished a final MOS criterion list was prepared. To ensure that the panel members had indeed used the front-end-analysis information developed prior to the initial round of decisions, multiple linear regression analyses were conducted to determine the extent to which seven decision variables contributed to the prediction of the final MOS priority list. Results indicated that MOS density class, the projected soldier's manual completion date, and placement of the MOS in the medical evacuation chain contributed most highly to the final MOS order with R^2's of .66, .50, and .48 respectively. In terms of prediction for both initial and revised group judgments, all decision variables combined accounted for over 90% of the variance in both lists. These findings were interpreted as providing evidence for a systematically derived and reliably prioritized list of AMEDD MOS. The final list will be used to guide workloads and schedules for the soldier's manual and skill qualification test project.

Technical Report AHS - 2

October 1982

AMEDD MOS Priorities For Development Of Soldier's Manuals and Skill Qualification Tests

Kenn Finstuen, M.S., M.Ed., Ph.D.

Individual Training Division (ITD)
Directorate of Training Development
Academy of Health Sciences, U.S. Army
Ft. Sam Houston, Tx 78234

DISCLAIMER NOTICE : The views of the author are his own and do not purport to reflect the position of the Department of the Army or the Department of Defense

TABLE OF CONTENTS

ILLUSTRATION

LIST OF TABLES

AMEDD MOS Priorities For Development Of
Soldier's Manuals and Skill Qualification Tests

BACKGROUND

Recent requirements from TRADOC have directed that new soldier's manuals (SM) and supporting skill qualification tests (SQT) be developed for the Army Medical Department (AMEDD) military occupational specialties (MOS). While some of the 32 AMEDD MOS are exempt, the near term objective of this project is to produce a set of job and task analysis worksheets (JTAW) to support approximately 27 SM and related SQT materials within the next 12 months. Three Directorate of Training Development (DTD) organizations are to be involved in this project: 1) the Individual Training Analysis, Design, and Development Branch (ITADDB) of the Individual Training Division (ITD), 2) the Performance Measurement Branch (PMB) of the Doctrine and Training Literature Division (DTLD), and 3) the Collective Training Division (CTD). This intensive effort required a prioritization of MOS's for the purposes of work load scheduling and for the efficient direction of activities within the short time frame available to complete the project. At the request of DTD, the Iterative Decision Method (IDM) was applied to the 32 AMEDD MOS to determine an agreed upon prioritization that could meet the workloading and scheduling needs of the three organizations involved. This report documents the joint actions taken by DTLD, ITD, and CTD for the initial phase of the SM/SQT project. The IDM logic may be found in Carroll & Finstuen (1982).

METHOD

Participants

Seven project personnel served on the SM/SQT planning panel. Each organization provided one military and one civilian member, with the exception of two civilians who represented DTLD. Panel members and functions are at Table 1.

Table 1

SM/SQT Planning Panel Members

Organization	Member	Function
ITADDB	Lieutenant Colonel	Chief, ITADDB
ITD	Civilian	Education Specialist
CTD	Captain	Collective Training
CTD	Civilian (Ph.D.)	Education Specialist
PMB	Captain	Project Coordinator
DTLD	Civilian	Test Specialist
PMB	Civilian	Project Manager

Procedure

To provide a complete set of AMEDD training priorities, all 32 MOS's were identified for this study (Table 2). Once all MOS's were identified, the next step was to conduct a Front-End Analysis (FEA) to determine what types of information (MOS attributes) were pertinent to serve as a basis for making MOS prioritization decisions. Panel members met on 9 September and identified nine categories of

Table 2

Army Medical Department Military Occupational Specialties

CMF Order	MOS Code	Description
1	01H	Biological Science Research Assistant
2	35G	Biomedical Equipment Repairman
3	35U	Biomedical Equipment Maintenance Chief
4	42C	Orthotic Specialist
5	42D	Dental Laboratory Specialist
6	42E	Optical Laboratory Specialist
7	71G	Patient Administrative Specialist
8	76J	Medical Supplyman
9	91B	Medical Specialist
10	91C	Practical Nurse
11	91D	Operating Room Specialist
12	91E	Dental Specialist
13	91F	Psychiatric Specialist
14	91G	Behavior Science Specialist
15	91H	Orthopedic Specialist
16	91J	Physical Therapy Specialist
17	91K	Urology Specialist
18	91L	Occupational Therapy Specialist
19	91N	Cardiac Specialist
20	91P	X-Ray Specialist
21	91Q	Pharmacy Specialist
22	91R	Veterinary Specialist
23	91S	Environmental Health Specialist
24	91T	Animal Specialist
25	91U	Ear, Nose, & Throat Specialist
26	91V	Respiratory Specialist
27	91W	Nuclear Medicine Specialist
28	91X	Health Physics Specialist
29	91Y	Eye Specialist
30	92B	Medical Laboratory Specialist
31	92E	Cytology Specialist
32	94F	Hospital Food Service Specialist

Note: 91K is not currently an approved MOS

information which might possibly impact project scheduling. As a team effort, specific information was gathered and compiled by the organizations indicated in column one of Table 3. MOS worksheets which listed FEA categories and seven decks of 3 x 5 index cards which listed each MOS were prepared. The panel met again on 15 September to consolidate the FEA information and to render the

Table 3

Potential FEA Information Categories

Identified By The SM/SQT Planning Panel

Organization	FEA Information Categories
ITADDB	1. Density Classification (AHS, 1982)
PMB/DTLD	2. Soldier's manual date and coverage
ITADDB	3. Availability of JTAW's
ITADDB	4. TDA versus TOE MOS status
PMB	5. Availability of Subject Matter Experts
PMB	6. Current Field/Technical Manual development
PMB/DTLD	7. Split proponency (Training developed at other schools)
PMB	8. Projected completion date
CTD	9. Placement of MOS in evacuation chain

first round of independent priority judgments. Members recorded the information available for each MOS in their MOS worksheets and made any notes they felt might be helpful in the independent round of prioritization judgments (J1). After the panel completed the FEA summaries, members were briefed on the IDM technology and were asked to prioritize decks of MOS cards, one deck of 32 cards per member. All card decks were initially arranged in CMF order (see Table 1). After members completed their J1 decisions they were asked to return the following day to examine the J1 results and to render a revised group decision (J2) in regard to a single MOS prioritization. Data coding and regression analysis results were prepared by ITD. When the planning panel reconvened, results were interpreted and discussed. The output of this meeting was an agreed upon prioritized MOS list to be used as a centralized management tool to guide SM/SQT development within and among all three organizations involved in the project.

RESULTS

The overall results of this study indicated that panel members independently agreed upon the relative placement of 23 of the 32 MOS's (71.88%), therefore only nine MOS priorities required discussion in the J2 group mode.

Analysis of Rater J1 Decisions

The zero order correlation between the original CMF card order and the J1 MOS ranks was calculated to determine the degree of similarity associated with the starting and ending card orders. The resultant *rho* (30 d.f.) = .09 was non-significant and indicated that the panel members had produced an MOS order different from the starting CMF order. This finding was interpreted as providing evidence that panel members had been attentive and understood the MOS ranking

procedure, and had reordered the card decks based on information other than the initial CMF order.

Table 4 presents the intercorrelations among the raters' J1 prioritization decisions. As shown, all comparisons were statistically significant from a zero correlation, and indicated that raters generally agreed upon MOS priorities.

Table 4
Analysis of SM/SQT Planning Panel Independent Prioritization Judgments (J1)[a]

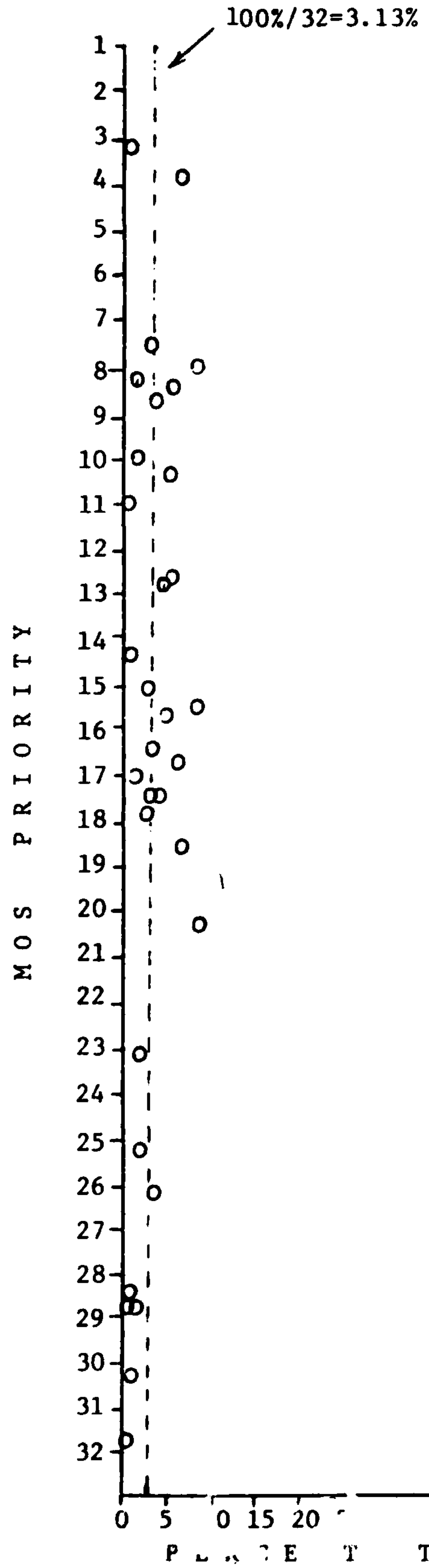
Organization	Member[b]	Ind. Training 1(M)	Ind. Training 2(C)	Coll. Training 3(M)	Coll. Training 4(C)	Doctrine & Tng Lit. 5(M)	Doctrine & Tng Lit. 6(C)	Doctrine & Tng Lit. 7(C)
Ind. Tng.	1(M)	1.00	.84	.86	.77	.71	.50	.60
	2(C)		1.00	.85	.72	.69	.68	.74
Coll. Tng.	3(M)			1.00	.85	.71	.53	.61
	4(C)				1.00	.55	.42	.53
Doc. & Tng. Lit.	5(M)					1.00	.52	.49
	6(C)						1.00	.63
	7(C)							1.00

Note: All Spearman rank difference correlations were statistically significant from zero, $p < .05$.
[a]Number of MOS = 32
[b](M) = military panel member, (C) = civilian panel member

Inter-organizational agreements are under-scored in the table. The highest inter-organizational agreement coefficient (.85) was observed between the military and civilian members from collective training, followed by the coefficient for individual training (.84). While correlations among DTLD representatives were somewhat lower in magnitude (.52, .49, and .63) all coefficients were positive and statistically significant. The highest intra-organization agreement occurred between the military member from the collective training division and members from the individual training function. The absence of negative coefficients indicated that panel members generally ordered the MOS's in the same direction and that with the exception of a few minor differences, that each organization's input was well represented.

Analysis of J1 MOS Decisions

Figure 1 presents the J1 Iterative Decision Method results for the 32 AMEDD occupational specialties. Individual MOS's (indicated by circles) are arrayed vertically along the MOS priority dimension, and are arrayed horizontally along a percentage of disagreement dimension. Priority ranks and associated figures also



Goodness-of-fit Group Equation		$\underline{R}$ = .84
Inter-rater Reliability		ρ_{77} = .93
Hypothesis of Rank Mean Differences		$\underline{F}(31,186) = 14.44$, $\underline{p} < .001$.

Priority Rank	Rank $\bar{X}$	Disagree %	MOS	Description
1	3.29	.74	91C	Practical Nurse
+ 2	3.86	6.12	91B	Medical Spec.
3	7.57	2.99	91E	Dental Spec.
+ 4	8.00	7.42	91D	Operating Rm Spec.
5	8.14	1.66	92B	Med. Lab Spec.
+ 6	8.29	5.49	76J	Med Supplyman
7	8.71	2.67	91P	X-Ray Spec.
8	10.00	1.39	91Q	Pharmacy Spec.
+ 9	10.14	5.08	71G	Pat. Admin. Spec.
10	11.00	.43	91S	Environ. Health
+11	12.71	5.34	91R	Veterinary Spec.
12	12.86	4.15	91G	Behav. Science
13	14.29	.38	42D	Dental Lab Spec.
14	15.00	2.00	91F	Psychiatric Spec.
+15	15.29	7.98	94F	Hosp. Food Svs.
16	15.43	3.35	42E	Optical Lab Spec.
17	16.29	3.02	91U	ENT Spec.
+18	16.43	5.31	91V	Respiratory Spec.
19	17.00	1.32	91Y	Eye Spec.
20	17.43*	3.60	91T	Animal Spec.
21	17.43*	4.92	91J	Phy. Ther. Spec.
22	17.71	2.38	91H	Orthopedic Spec.
+23	18.71	6.81	42C	Orthotic Spec.
+24	20.29	8.41	35G	Biomed Equip Rep.
25	23.14	1.59	91L	Occupational Ther.
26	25.29	1.70	35U	Biomed Equip Chief
27	26.14	2.76	92E	Cytology Spec.
28	28.43	.17	91W	Nuclear Med Spec.
29	28.57*	.17	91X	Health Physics Spec.
30	28.57*	.24	91N	Cardiac Spec.
31	30.14	.37	01H	Bio Sci. Rsch Asst.
32	31.86	.01	91K	Urology Spec.
		total = 100.00		

* = tied rank average, ordered by least amount of disagreement

\+ = MOS targeted for discussion 9/32 = 28%

Figure 1. Standard IDM graphic display for SM/SQT Planning Panel independent prioritization judgments (J1) of AMEDD MOS's.

are provided for each MOS. The goodness-of-fit index (multiple correlation coefficient R) computed for the group equation was quite high -- .84. The corresponding R^2 (.7056) indicated that 70.56 (R^2 x 100) of the variance in the individual panel decisions (32 MOS x 7 members = 224 decisions) could be accounted for by the following group prediction equation:

$$Y = w_1M^{(1)} + w_2M^{(2)} + w_3M^{(3)} + \dots + w_{31}M^{(31)} + w_{32}M^{(32)} + c ,$$

where Y is the vector of decision scores, $M^{(i)}$, $i = 1$ to 32, are MOS predictor variables coded 1 if the observed decision score was associated with a particular MOS, 0 otherwise; w_j, $j = 1$ to 32, are the raw least squares regression weights associated with each MOS; and c is the regression constant.(Ward & Jennings, 1972).

The inter-rater reliability ($\underline{rho}_{77}$) was also quite acceptable (.93) and indicated that overall panel members had been very consistent in the placement of MOS's along the priority dimension. If another set of seven project personnel were to rank order the MOS's, it would be expected that their rank averages would correlate .93 with the rank averages obtained from the SM/SQT planning panel.(Guilford & Fruchter, 1972).

Finally, the F statistic demonstrated that there were statistically significant differences among the MOS rank averages. This finding indicated that panel members had discriminated among MOS's in terms of the need for immediate versus later training development actions.

Analysis of J2 MOS Decisions

While J1 results were favorable, some MOS's were disagreed upon more than others (indicated by a plus sign to the left of the J1 priority rank in Fig. 1). A cutoff value of 5% disagreement or more was used to target nine specific MOS's for discussion. The cutoff value was chosen because it fell roughly between the MOS with the largest amount of disagreement (8% for 35G - Biomed Equip Rep) and the hypothetical equal amount of per MOS disagreement (100% divided by 32 MOS = approximately 3 %). During the J2 discussion mode, concerning the top 10 MOS's, panel members unanimously decided to move 91B above 91C, and to move 76J between 91D and 92B. Other revised decisions of lesser importance involved the movement of 91R and 94F to lesser priorities, and the movement of 91L to a higher priority. Table 5 presents a facsimilie of the final J2 document that was produced and distributed to the SM/SQT planning panel after the J2 session was completed.

Table 5

Final Priorities (J2) For SM/SQT Planning Panel

Priority	Nr.	MOS
1	91B	Medical Specialist
2	91C	Practical Nurse
3	91E	Dental Specialist
4	91D	Operating Room Specialist
5	76J	Medical Supplyman
6	92B	Medical Lab Specialist
7	91P	X-Ray Specialist
8	91Q	Pharmacy Specialist
9	71G	Patient Admin Specialist
10	91S	Environmental Health Specialist
11	91G	Behavior Science Specialist
12	42D	Dental Lab Specialist
13	91F	Psychiatric Specialist
14	42E	Optical Lab Specialist
15	91U	ENT Specialist
16	91V	Respiratory Specialist
17	91Y	Eye Specialist
18	91R	Veterinary Specialist
19	91T	Animal Specialist
20	91J	Physical Therapy Specialist
21	91H	Orthopedic Specialist
22	42C	Orthotic Specialist
23	91L	Occupational Therapy Specialist
24	94F	Hospital Food Specialist
25	35G	Biomedical Equipment Repair
26	35U	Biomedical Equipment Chief
27	92E	Cytology Specialist
28	91W	Nuclear Medicine Specialist
29	91X	Health Physics Specialist
30	91N	Cardiac Specialist
31	01H	Biological Sciences Research Assistant
32	91K	Urology Specialist

Analysis of FEA Information Used In Decisions

While the final results in Table 5 fulfilled the major objective of this study, additional analyses were conducted to determine the degree to which the FEA information was associated with individual panel member decisions and with the J1 and J2 group decisions.

To accomplish this phase of the study variables were generated for seven of the nine FEA categories (see Table 3). Two categories were not used since almost all of the SM carried a date of 1977 and coverage was regarded as questionable; and current field and technical manual development data were sparse and incomplete. Table 6 presents the predictor variables for FEA information.

Table 6

18 FEA Variables Used In MOS Prioritization

FEA Category/Variable	Description of Variable Coding
1. Density classification	
$D^{(1)}$	Coded 1 if MOS = Ultra High (over 6000), 0 otherwise
$D^{(2)}$	Coded 1 if MOS = High (1000 - 2000), 0 otherwise
$D^{(3)}$	Coded 1 if MOS = Medium (400-700), 0 otherwise
$D^{(4)}$	Coded 1 if MOS = Low (100-300), 0 otherwise
$D^{(5)}$	Coded 1 if MOS = Extremely Low (less than 100), 0 otherwise
2. SME Availability	
S	Coded 1 if SME was available, 0 if unavailable
3. JTAW Availability	
JT	Coded 1 if JTAW's were available, 0 if unavailable
4. TOE/TDA	
T	Coded 1 if MOS identified in both TOE/TDA units, 0 otherwise
5. Projected completion date	
$CD^{(1)}$	Coded 1 if completion date = Apr 83, 0 otherwise
$CD^{(2)}$	Coded 1 if completion date = Oct 83, 0 otherwise
$CD^{(3)}$	Coded 1 if completion date = Nov 83, 0 otherwise
$CD^{(4)}$	Coded 1 if completion date = Dec 83, 0 otherwise
$CD^{(5)}$	Coded 1 if completion date = Dec 84, 0 otherwise
$CD^{(6)}$	Coded 1 if MOS was exempt, 0 otherwise
6. Evacuation Chain	
$E^{(1)}$	Coded 1 if MOS located at division level, 0 otherwise
$E^{(2)}$	Coded 1 if MOS located at corps level, 0 otherwise
$E^{(3)}$	Coded 1 if MOS located at echelon above corps (EAC), 0 otherwise
7. Split proponency	
P	Coded 1 if MOS proponency shared with another school in addition to AHS, 0 otherwise

Note: Variables are mutually exclusive and categorically exhaustive.

Relationships between FEA information and individual member decisions. To determine the degree of relationship between the FEA variables and independent panel member decisions (J1), each members' decision vector was regressed upon the 18 FEA predictor variables across the 32 MOS's. The functional form of the regression equations employed for individual panel members; and for the J1 and

J2 group decisions was as follows:

$$Y = w_1D^{(1)} + w_2D^{(2)} + \ldots + w_5D^{(5)} + w_6S + w_7JT + w_8T + w_9CD^{(1)} + w_{10}CD^{(2)} + \ldots + w_{14}CD^{(6)} + w_{15}E^{(1)} + \ldots + w_{17}E^{(3)} + w_{18}P + c \quad ,$$

where Y is the decision vector of interest, the predictor variables are as defined in Table 6, w_j, j = 1 to 18, are raw least squares regression weights associated with each of the predictor variables, and c is a regression constant. Table 7 presents the regression results for individual panel members. As shown the FEA information was highly predictive of individual MOS decisions for all members. These findings indicated that panel decisions were in fact based upon

Table 7

Multiple Linear Regression Results For The Prediction Of Individual Member Decisions From FEA Information

Organization	Panel Member[a]	N Decisions	NLIPV[b]	R^2	p[c]
Ind. Tng.	1 (M)	32	16	.96	**
	2 (C)	32	16	.94	**
Coll. Tng.	3 (M)	32	16	.84	**
	4 (C)	32	16	.82	**
Doc. & Tng. Lit.	5 (M)	32	16	.72	*
	6 (C)	32	16	.88	**
	7 (C)	32	16	.84	**

[a](M) = military panel member, (C) = civilian panel member

[b]NLIPV = Number of Linearly Independent Predictor Variables

[c]Multiple correlations statistically significant from a correlation of zero, $*p < .05$, $**p < .01$.

meaningful information and were arrived at in a logical and carefully thought out manner. Since the SM and field/technical manual variables were not included in the analysis, it may be speculated that panel members with lower coefficients (i.e. .72) may have used such information in addition to the seven categories analyzed. Speculation aside, the FEA information accounted for at least 70% of the variance in individual member decisions ($R^2 \times 100$; $.72 \times 100 = 72\%$). These results clearly demonstrate that the FEA information was highly associated with member decisions, and constituted a concise and comprehensive basis for the MOS prioritization.

Relationships between FEA information and J1 - J2 group decisions. To determine the degree of relationship between the FEA variables and the J1 and J2 group decisions, group rank decision results were regressed upon the seven FEA categories separately, and collectively. Table 8 presents the resultant squared multiple correlations for these comparisons.

Table 8

Multiple Linear Regression Results For The Prediction Of J1 and J2 Group Decisions From FEA Information

FEA Category	NLIPV[a]	Squared Multiple Correlations R^2	
		J1 Independent Judgments	J2 Revised Group Judgments
1. Density classification	5	.769	.658
2. SME Availability	2	.232	.225
3. JTAW Availability	2	.308	.205
4. TOE/TDA	2	.222	.308
5. Projected completion date	6	.428	.499
6. Evacuation chain	3	.582	.484
7. Split proponency	2	.001	.004
All categories	16	.948	.903

Note: Equations based on n = 32 MOS

[a]NLIPV = Number of Linearly Independent Predictor Variables

For the interpretation of these results, 100 times the R^2 value is the percent of variance accounted for in the J1 or J2 group decisions by the particular set of predictor variables (FEA information). Separately, the density categorical variables accounted for over three-fourths of the J1 group decision variance. Likewise, the evacuation chain categorical variables accounted for over one-half of the J1 group decision variance. The fact that the percentages of prediction for these two predictor variable sets when summed account for more than 100% indicates that density and evacuation variables contain a certain amount of shared variance, since prediction cannot exceed 100% of the criterion (Y). This effect is borne out conceptually in that the Ultra High MOS's 91B and 91C are concentrated at the division level of the evacuation chain. The summary statistics in Table 8 also indicate that proponency was not as highly associated with the outcome decisions as density, evacuation, and projected completion date information. The overall R^2 results for both J1 and J2 were quite high (.95 and .90 respectively) and may be regarded as evidence for a stable and appropriately

prioritized listing of AMEDD MOS's for the SM/SQT project, which was based upon several types of FEA information.

DISCUSSION AND RECOMMENDATIONS

The results of this study represent a defensible, systematically derived, and reliably prioritized listing of AMEDD MOS's for the development of SM/SQT training materials. The IDM procedure was used to model 224 independent decisions from 7 project personnel. Results were employed as feedback by the planning panel to arrive at an agreed upon group management decision for the SM/SQT project. The revised group judgments (J2) for the prioritization of MOS's represents compromise and trade-off decisions necessary for the three organizations involved to accomplish a unified mission in the development of SM and SQT materials.

This study also demonstrates the mutual benefits of IDM decision-making and FEA activities. Results from the IDM process can only be as good as the FEA results upon which they are based. Likewise, high quality FEA results are usable only if an effective and efficient decision-making procedure is available to translate the data into a clear course of action.

The recommendation is made to DTD that the results of this study be adopted to structure milestones and schedule work loads for the forthcoming SM/SQT project.

REFERENCES

Academy of Health Sciences. (1982). Army Medical Department MOS Density Classification Chart - Extracted from The Army Authorization Documents System (authorized strength figures). Ft. Sam Houston, Tx.: Individual Training Division, Directorate of Training Development.

Carroll, T. D., & Finstuen, K. US Army Advanced Medic (91B30) Training: An iterative decision method application. Proceedings of the 24th Annual Conference of the Military Testing Association, 1982, 1, 297-302.

Finstuen, K. An iterative decision method for selecting medical tasks for training. Proceedings of the 24th Annual Conference of the Military Testing Association, 1982, 1, 379-384.

Guilford, J. P., & Fruchter, B. (1972). Fundamental statistics in psychology and education (5th ed.). New York: McGraw-Hill.

Ward, J., & Jennings, E. (1972). Introduction to linear models. Englewood Cliffs, N.J.: Prentice-Hall.

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE

END

FILMED

11-83

DTIC